

Release Note

Release Date : July. 06, 2023

Product Ver. : Civil 2023 (v1.2)



DESIGN OF CIVIL STRUCTURES

Integrated Solution System for Bridge and Civil Engineering

Enhancements

Enhancements in Civil 2023 (v1.2)

1. Improvement of Design Speed for Eurocode
2. Remove the requirement of clause 9.5.2 in EC2
3. Bug fixes found in Civil 2023 (v1.1)

Enhancements in Civil 2023 (v1.1): Refer to Civil 2023 (v1.1) release note for details.

1. Moving Load Analysis to French Former Standard: FASCICULE N° 61 TITRE II
2. French National Annex to Eurocode 2, 3, 4
3. Eurocode Design Report in French
4. Eurocode Design Report in Word Format
5. Preference Setting for Design Report Language
6. Time Dependent Material: Modulus of Elasticity Suggested by Gilbert and Ranzi
7. PSC Design: User Input of Torsion Parameters, A_k and u_k
8. Equivalent Beam Stress Results for Construction Stage Analysis
9. GSD Excel Report: Print Results of All Load Combinations
10. Concrete & Rebar Material Database to South Africa: TMH7
11. Concurrent Disp./Vel./Accel. for Time History Analysis
12. Transmission Zone Design of Pretensioned Beam to AASHTO LRFD
13. SNI/SP PSC Design: Crack Opening Coefficient by Tendon Material
14. Concurrent Joint Forces
15. Improvement in Auto Load combinations as per IRC 6
16. Improvement in PSC design parameters as per IRC 112:2020
17. Improvement in PSC & RC design as per IRC 112:2020
18. Other Enhancements



1. Improvement of Design Speed for Eurocode

In previous versions, the design engines of each design code were independent and individually divided for each design code. We had separate design engines for Eurocode, AASHTO code, etc for various midas family programs, i.e. midas Civil, midas Gen.

Since Civil 2023, the design engines of Eurocode have been integrated into one. The developer can now implement new design code faster, update existing design code faster, and fix bugs faster than in the past. With this new design engine, the design speed is a little slow for the small number of elements to be designed, but the speed becomes faster with the large number of elements.

In Civil 2023 (v1.2), the design speed of Eurocode has been improved as follows:

Plate 1D Beam/Column Design to EC2

- Design speed in Civil 2023 (v1.2) becomes 2.8 times faster than in the previous version.

Steel Composite Girder Design to EC4

- Design speed in Civil 2023 (v1.2) becomes 1.6 times faster than in the previous version.

2. Remove the requirement of clause 9.5.2 in EC2

RC Column Checking to EC2

- The requirement of the minimum diameter of longitudinal reinforcement for the column design has been removed.

9.5.2 Longitudinal reinforcement

(1) Longitudinal bars should have a diameter of not less than ϕ_{\min} .

Note: The value of ϕ_{\min} for use in a Country may be found in its National Annex. The recommended value is 8 mm.

3. Bug fix list found in Civil 2023 (v1.1)

[Steel Composite Girder Design to EC4]

- The composite section shown in the design report was inappropriate. The shear connectors were placed abnormally.
- When the concrete material code was set to None in the 'Modify Concrete Material' dialog box, the elastic modulus of the slab was applied as 0, causing the following problems.
 - The elastic resistance of moment, $M_{el,Rd}$ was incorrect.
 - The section properties of the composite section under the positive moment were incorrect in the Excel report.

[Steel Design to EC3]

- The steel design results were all zero when both steel and concrete material were used in the model.

[RC Design to EC2]

- The design results were all zero when the serviceability load combinations were defined before the strength load combinations.
- Concrete Beam Design was not performed when the warping constant was included in the section data.

[Plate Beam/Column Design to EC2]

- The shear design ratio in the summary report was different from that in the design table and detail report. The ratio in the summary report was wrong.

[Rail Track Analysis Report]

- When trying to generate the RSI report, there was an error saying 'There is no base file !!'.

[Steel Code Check to Taiwan code]

- After performing the steel code check, the program crashed when we tried to view the "Graphic" report.

[Load Combination to AASHTO LRFD 2017]

- When generating the combinations of Extreme Event I, the load factor of the permanent loads has been changed from γ_p to 1.0 since AASHTO LRFD 2017. However, this change was not updated in the program.

[Moving Load Analysis to Australian Code]

- The analysis crashed as soon as the moving load analysis started. This was happening when the number of threads was set to larger than 1.

[Time Dependent Material to IRC: 112-2020]

- Creep, Shrinkage, and time-varying compressive strength to IRC:112-2020 was allowed to be selected, but the analysis failed. This code has been removed in Civil 2023 (v1.2).